Asian Journal of Pharmaceutical Technology and Innovation

Abstract

Stability study of cannabidiol in selected medinical formulation by chromatographic techniques

Ema Kosovic[1,2], David Sýkora[1]

[1]*University of Chemistry and Technology in Prague, Technická 5, Prague 6, 16628, CZ*

[2]*Institute of Chemical Process Fundamentals of CAS v.v.i., Rozvojová 135, Prague 6, 16502, CZ*

Abstract:

Analysis of plant extracts provides valuable information on natural occurrence of pharmacologically important compounds. Their application is possible in a wide range of sectors, starting with medicine, pharmacy, cosmetic and food industry, but usability is greatly influenced by their stability. For this reason, stability studies which allow the evaluation of the stability of an active pharmaceutical substance (API) or the finished medicinal product are an essential part of pharmaceutical development1. According to International Conference on Harmonization guidelines (ICH), stress studies are mostly performed on a single dose of API and must include the effects of temperature (increase of 10 °C above the accelerated test temperature), humidity (75% relative humidity or higher), light (photolysis) and air oxygen2. Based on obtained data, the active substance should be evaluated under storage conditions (with appropriate tolerances) to verify its thermal stability and moisture sensitivity.

Currently, the analysis of bioactive substances extracted from Cannabis is a topic of considerable interest, although sensitive, selective and available methods for qualitative and quantitative analysis are required. Advanced analytical techniques are therefore particularly important for the effective monitoring of analytes, their metabolites and degradation products, especially at low and trace concentrations.

In the present work, a reversed-phase HPLC-MS method was developed for simultaneous analysis, quantification, and qualification of CBD and its possible degradation products. After verifying the applicability of the method in preliminary experiments, the stability tests of CBD were performed in accordance with ICH rules. CBD samples exposed to stress conditions in the form of CBD-oil matrix were found to be nearly complete degraded during the six-month study, while the plain API samples remained unchanged.

Biography:

Ema Kosovic is a student of the second year of doctoral studies at the Institute of Chemical Process Fundamentals of CAS and assistant in LC-MS lab at UCT Prague. Her main focus is forensic analytical chemistry and currently, she is working on stability studies of bioactive compounds usable mostly in pharmacy and medicine.

Recent Publications:

1. Ema Kosovic, Stability testing of resveratrol and viniferin obtained from Vitis vinifera L. by various extraction methods considering the industrial viewpoint,2020
2. David Sýkora, et al; New multimodal stationary phases prepared by Ugi multicomponent approach,2020
3. David Sýkora, et al; Strategy for improved therapeutic efficiency of curcumin in the treatment of gastric cancer,2019
4. David Sýkora, et al; Recent advances in mixed-mode chromatographic stationary phases,2018
5. David Sýkora, et al; Lipopeptides as therapeutics: applications and in vivo quantitative analysis,2017

Webinar on Drug Design Techniques and Pharmacology ; September 22, 2020 ; Paris, France

Citation: Ema Kosovic; Stability study of cannabidiol in selected medinical formulation by chromatographic techniques; Euro Drug Design 2020; September 22, 2020; Paris, France